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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,206	04/22/2005	Peter Anna	271246US8PCT	6756

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

BUTTNER, DAVID J

ART UNIT	PAPER NUMBER
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1712

NOTIFICATION DATE	DELIVERY MODE
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07/18/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/532,206

Applicant(s)

ANNA ET AL.

Examiner

David Buttner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 7 is/are rejected.
- 7) ☒ Claim(s) 3-5,8-25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/17/05;4/22/05</u> . | 6) <input type="checkbox"/> Other: ____. |

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Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claims 5 and 9-25 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiply dependent claim. See MPEP § 608.01(n). Accordingly, the claims 5 and 9-25 not been further treated on the merits.

Claims 3,4 and 8 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must refer to other claims in the alternative – "and" should be "or". See MPEP § 608.01(n). Accordingly, the claims 3,4 and 8 not been further treated on the merits.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,2,6 and 7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 1 requires the polymer to be crosslinked, yet requires pendant –NCO and hydroxyl groups. This is inconsistent. If in its crosslinked state, the –NCO and hydroxyl groups are reacted together and there will not be significant free –NCO or hydroxyl groups left. Conversely, if there are significant amounts of available –NCO and hydroxyls present, then the material is uncrosslinked. In which state is the material being claimed?

Claim 2's "polymer-analog reaction" is never defined.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,2,6 and 7 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Culbertson '451.

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Culbertson exemplifies (X) a composition of a allylphenol polymer, a polyisocyanate and triethylamine catalyst. Inherently, the urethane linkages must be reversible. Note that claim 6 doesn't require the isocyanate to be attached to the main chain.

Claims 1,2,6 and 7 rejected under 35 U.S.C. 103(a) as obvious over Kanagawa '803 in view of Benecke '263.

Kanagawa produces elastomers having phenolic hydroxyl groups by either copolymerizing the phenolic monomer with a diene or monounsaturated monomer or grafting the phenolic monomer onto an elastomer (col 1 line 65- col 2 line 13). The modified elastomer can then be crosslinked with a diisocyanate (col 5 line 21). Kanagawa does not suggest the inclusion of catalysts for the isocyanate- phenolic crosslinking reaction.

Catalysts for the urethane reaction are well known. Benecke (col 2 line 6-9) can be cited to name such catalysts. It would have been obvious to add a catalyst to Kanagawa's crosslinking reaction to accelerate the reaction.

Claims 1,2,6 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Chino 2004/0059060 in view of Benecke '263.

Chino teaches reversible crosslinked elastomeric compositions. The elastomer contains a phenolic or isocyanate group (paragraph 95). The modified elastomer is then crosslinked with a phenol or diisocyanate (paragraphs 119-121). Some of the elastomers are saturated (paragraph 60). Chino does not suggest the inclusion of catalysts for the isocyanate- phenolic crosslinking reaction.

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Catalysts for the urethane reaction are well known. Benecke (col 2 line 6-9) can be cited to name such catalysts. It would have been obvious to add a catalyst to Chino's crosslinking reaction to accelerate the reaction.

Claims 1,2,6 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher '137 in view of Benecke '263.

Fischer grafts unsaturated isocyanates to polymer backbones (abstract). The grafted material can then be crosslinked with diols (col 11 line 26). Fisher does not teach catalysts for the diol-isocyanate crosslinking reaction.

Catalysts for the urethane reaction are well known. Benecke (col 2 line 6-9) can be cited to name such catalysts. It would have been obvious to add a catalyst to Fisher's crosslinking reaction to accelerate the reaction. Also note Fischer explains that aliphatic alcohols as well as phenols form reversible linkages with isocyanates (col 1 line 40-45).

It appears applicant intends to claim multiple compositions and processes. If such claims are properly presented in the next response, then restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1-20 and 24, drawn to composition.

Group II, claims 21-23 and 25, drawn to a method of making a composition.

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The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The composition of claim 1 does not avoid the prior art - MPEP 1850.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

Various functionalized thermoplastics.

Various catalysts.

Various optional processing aids.

Select a single composition specifying all ingredients present. Some examples of a proper election are:

1) hydroxyethylacrylate grafted polyethylene + polyisocyanate + zinc stearate

OR

2) ethylene/hydroxystyrene copolymer + polyisocyanate + hindered amine + clay

OR

3) isocyanatoethyl acrylate grafted polypropylene + polyphenol + zinc stearate

OR

4) (isocyanatoethyl acrylate + allylphenol) grafted to polyethylene + hindered amine + bentonite

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Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: The generic composition claim 1 does not avoid the prior art – MPEP 1850.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

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Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Buttner whose telephone number is 571-272-1084. The examiner can normally be reached on 10:00-5:30.

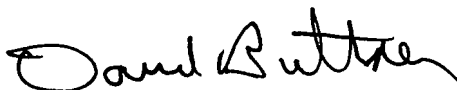
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DAVID J. BUTTNER
PRIMARY EXAMINER

David Buttner
7/11/07

A handwritten signature in black ink, appearing to read "David Buttner", written in a cursive style.